

REMARKS

Claims 1, 5-23, 25-30, and 32-45 remain in the application. The Examiner has indicated that, of these, claims 7-12, 21, 22, 36, and 37 would be allowable if rewritten in independent form including all base and intervening claim limitations.

As suggested by the Examiner in a telephone conference on 26 September 2005, the Applicant has amended the claims to recite a "monopole antenna." The Applicant has included this term to describe the disclosed combination of a monopole and a dielectric body that surrounds the monopole. The Examiner also asked that the Applicant point-out where the term "monopole antenna" can be found in the specification. In response, the Applicant maintains that, although the exact term "monopole antenna" isn't set forth literally in the specification, the application disclosure, as originally filed, clearly conveys to the artisan that the inventor had possession, at that time, of a radiation applicator comprising a monopole antenna that includes a dielectric body surrounding a monopole as claimed.

Both the Board of Patent Appeals and Interferences and the U.S. Court of Appeals for the Federal Circuit have repeatedly affirmed the principle that literal support of claim terms, or "explicit disclosure," is not required in order to meet the written description requirement of 35 U.S.C. § 112, first paragraph. "An invention claimed need not be described *ipsis verbis* in the specification in order to satisfy the disclosure requirements." *Ex parte Holt*, 19 USPQ2d 1211 (BPAI 1991). The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language. *In re Kaslow*, 217 USPQ 1089 1096 (Fed. Cir. 1983). In addition, according the Federal Circuit, "drawings alone may provide a 'written description' of an invention as required by § 112." *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111 1116 (Fed. Cir. 1991).

Both the drawings and the specification of the applicant's originally filed application clearly describe a structure that meets the definition of a monopole antenna as set forth in the attached page extracted from a text book on the subject, and as set forth in many other publications – many of which can be found through an internet search directed toward the term “monopole antenna.” (See, for example, http://www.electromagneticworks.com/hfworks_applications/hfworks_appb3.html.) The definition set forth in the text book extract is illustrated by drawings of a monopole antenna shown in Figure 2.11 that are quite similar to the representations of Figure 2 and 5 of the present application: For example, note that the central conductor shown at 240 in Figure 2 and at 340 in Figure 5 extends beyond the outer screening 210 in Figure 2 and in Figure 5 (no reference numeral for the outer screening in Figure 5). The normal radial pattern of radiation from a monopole is also clearly shown in Figure 2.12 of the text book extract. The text book definition also makes clear that one of ordinary skill in the art would understand the term “antenna” to apply to the whole of the monopole antenna assembly including both the dielectric body and the monopole.

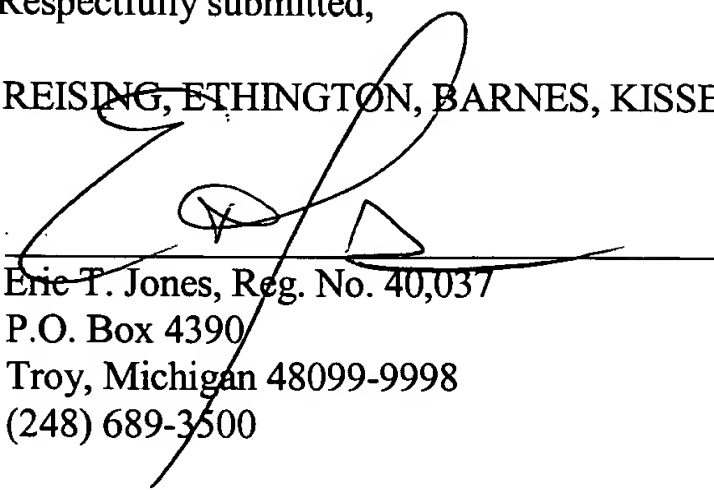
As is explained in greater detail in the applicant's previous response, several passages of the specification describe the dielectric body as being an essential active component of the antenna. (See, e.g., the paragraph at the top of page 2 of the specification of the published PCT application). As is also explained in applicant's previous response, existing well known antenna systems such as satellite TV antennas and yagi array TV antennas evidence the familiarity of those skilled in the art with the use of the term “antenna” to include a dipole supplemented by other active components such as dielectric bodies.

Claims 1, 5-23, 25-30, and 32-45 recite patentable subject matter and are allowable. Therefore, the Applicant respectfully submits that the application is now in condition for allowance and respectfully solicits such allowance. Please favorably reconsider the outstanding Office Action.

I authorize the Commissioner to change any deficiencies, or credit any overpayment associated with this communication, to Deposit Account No. 59-0852. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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Date: 4 October 2005



2.6.2 Monopole Antenna

The monopole antenna, shown in Figure 2.11, results from applying the image theory to the dipole. According to this theory, if a conducting plane is placed below a single element of length $L/2$ carrying a current, then the combination of the element and its image acts identically to a dipole of length L except that the radiation occurs only in the space above the plane as discussed by Saunders [8].

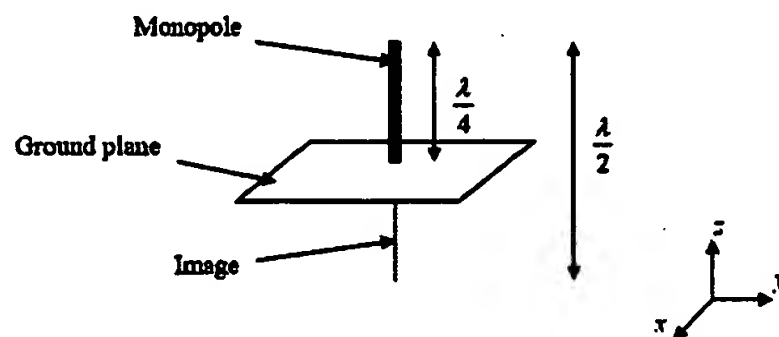


Figure 2.11 Monopole Antenna

For this type of antenna, the directivity is doubled and the radiation resistance is halved when compared to the dipole. Thus, a half wave dipole can be approximated by a quarter wave monopole ($L/2 = \lambda/4$). The monopole is very useful in mobile antennas where the conducting plane can be the car body or the handset case. The typical gain for the quarter wavelength monopole is 2-6dB and it has a bandwidth of about 10%. Its radiation resistance is 36.5Ω and its directivity is 3.28 (5.16dB) [4]. The radiation pattern for the monopole is shown below in Figure 2.12.

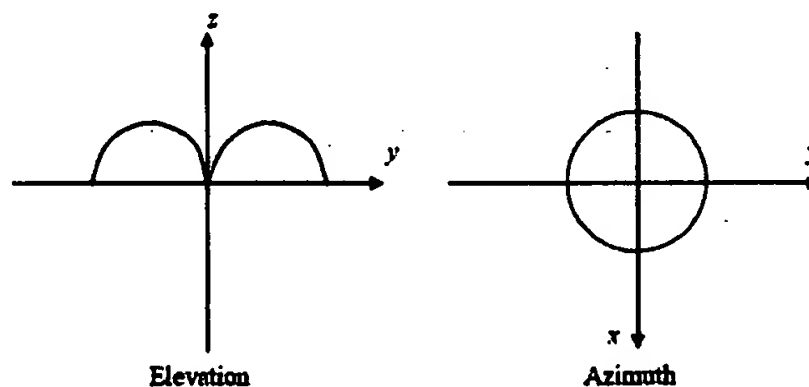


Figure 2.12 Radiation pattern for the Monopole Antenna